

## Three new platypleurine cicadas (Homoptera: Cicadidae) from Natal, South Africa

by

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Three new species of cicada are described in the genus *Platypleura* Amyot and Serville, and notes on their distributions, habitats and plant associations are provided.

### INTRODUCTION

The vast majority of the Asian and African cicadas now assigned to the subfamily Platypleurinae have, at one time or another, been placed in the genus *Platypleura*. However, since the genus was revised, first by Distant (1904) and later by Boulard (1972), it has been restricted to about 20 named, mainly Afrotropical, species.

Three new species belonging to this genus were found in Natal during the course of work on the signalling behaviour of the Cicadidae. They are described below. The anatomical terms used to describe the male genitalia are adapted from Boulard (1972).

Genus *PLATYPLEURA* Amyot and Serville, 1843

*Platypleura maytenophila* sp. nov., Figs 1c, d, 2a.

MALE: Longest axis of tegmen: 29.4 mm (27.8–30.8; n = 44).

Tegmina: grey, infused with green and brown nearer the base; veins green, with a herringbone pattern along them, especially in the post-discal area; three white patches in the radial cell; two white discal bars extend from the costal margin to the centre of the wing, and also a dark disco-basal bar on some specimens; a white patch on the anal angle.

Hind wing: orange; the area around the discal and marginal cross-veins black (these markings may converge to some degree in the subapical area); the very edge of the wing uncoloured; membrane black with a white patch near the ends of the anal cells; jugum may be darkened at its centre.

Head: green; ocelli joined by a black 'V'; black lines run between the antennae and the eyes, across the top of the clypeus, and from either side of the ocellar region to the eyes; clypeal groove black; rostrum just reaching the hind trochanters; face lightly hairy.

Thorax: bright green; pronotal sulci black; two black dashes on the anterior margin, and two curved black central markings; paranota rounded and moderately de-

veloped; mesothorax bears four triangular brown spots on its leading edge, the inner pair outlined by black lines, the outer pair elongated with black spots or dashes on each corner; two black lines separate a pair of dots just below the cruciform elevation; sparse hairs cover the dorsum; ventral surfaces ochrous green and covered with fine hairs; legs paler green; operculae barely overlapping.

Abdomen: black; a green triangular marking, with two black dots at its base, extends over the first few tergites; rim of tymbal covers greenish; a white, powdery coating on the pregenital tergite, except for a narrow median line; sternites ochrous green.

Male genitalia: Pygophore and urite X typical of genus (Boulard 1972); few spines on lateral lobes of urite X; apices of ventral processes stout (Fig. 2a).

FEMALE: Longest axis of tegmen: 29.3 mm (26.9–30.4;  $n = 13$ ). Marked like the male, but instead of the eighth, the seventh abdominal tergite is whitened.

MATERIAL EXAMINED: Holotype, ♂: SOUTH AFRICA: Natal, Mtunzini, [28° 58' S 31° 46' E], 12.i.85 M. H. Villet; 24 Paratypes: 1 ♀, same data as holotype; 1 ♂, same data but date 14.i.85; 1 ♂, same data but date 26.xi.84; 3 ♂♂, same data but date 5.ii.85; 1 ♂, 1 ♀, same data but date 10.ii.85; 1 ♂, 1 ♀, same data but date 12.ii.85; 1 ♂, same data but date 14.ii.85; 1 ♂, 1 ♀, Natal, Twinstreams Farm, Mtunzini [28° 58' S 31° 46' E], 14.i.85, M. H. Villet; 1 ♂, same data but date 1.ii.85; 2 ♂♂, Natal, Nyala Park Ranch [28° 40' S 31° 45' E], 20.ii.85, M. H. Villet; 1 ♀, Natal, Zinkwasi Beach [29° 16' S 31° 26' E], 11.xii.83, M. H. Villet; also 1 ♂, 2 ♀♀, same data but date 12.xii.83; 1 ♂, 2 ♀♀, same data but date 4.i.84; 1 ♀, Natal, Ratray Farm [28° 59' S 31° 30' E], i.83, P. Atkinson; also 1 ♀, same data but date iii.83; 1 ♂, Natal, Waterton Timber Co., [28° 20' S 32° 14' E], xi.82, P. Atkinson, at light.

Holotype in the Transvaal Museum, Pretoria; paratypes in the Transvaal Museum (3 ♂♂, 2 ♀♀), the National Collection of Insects, Pretoria (3 ♂♂, 2 ♀♀), the Natal Museum, Pietermaritzburg (3 ♂♂, 2 ♀♀), the British Museum (N.H.), London (4 ♂♂, 2 ♀♀), and the author's collection (3 ♂♂, 2 ♀♀).

This species is a sibling of *P. hirtipennis* Germar. However, their songs are completely different (Villet, in prep.); the markings on the tegmina of *P. maytenophila* sp. nov. are lighter than those of *P. hirtipennis*, and those on the hind wing are more restricted; the body of *P. hirtipennis* is brown rather than green; the rostrum reaches just past the hind trochanters of *P. hirtipennis*, and is thus proportionately slightly longer than that of *P. maytenophila* sp. nov.; the two species are sympatric in the bushveld west of Empangeni, Natal.

DISTRIBUTION: Natal coastal region (Fig. 3)

HABITAT: Found in coastal milkwood (*Mimusops caffra*) forest, coastal dune scrub and mixed bushveld. Strictly associated with the host plant *Maytenus heterophylla*.

### *Platypleura argentata* sp. nov., Figs 1a, b, 2b

MALE: Longest axis of tegmen: 29.6 mm (27.4–30.8;  $n = 15$ ).

Tegmina: greenish-brown basally, greyer towards margins; veins green, decorated with a herringbone pattern; each vein passes between two pairs of black submarginal dots; white markings include a spot on the anal angle, another two above it

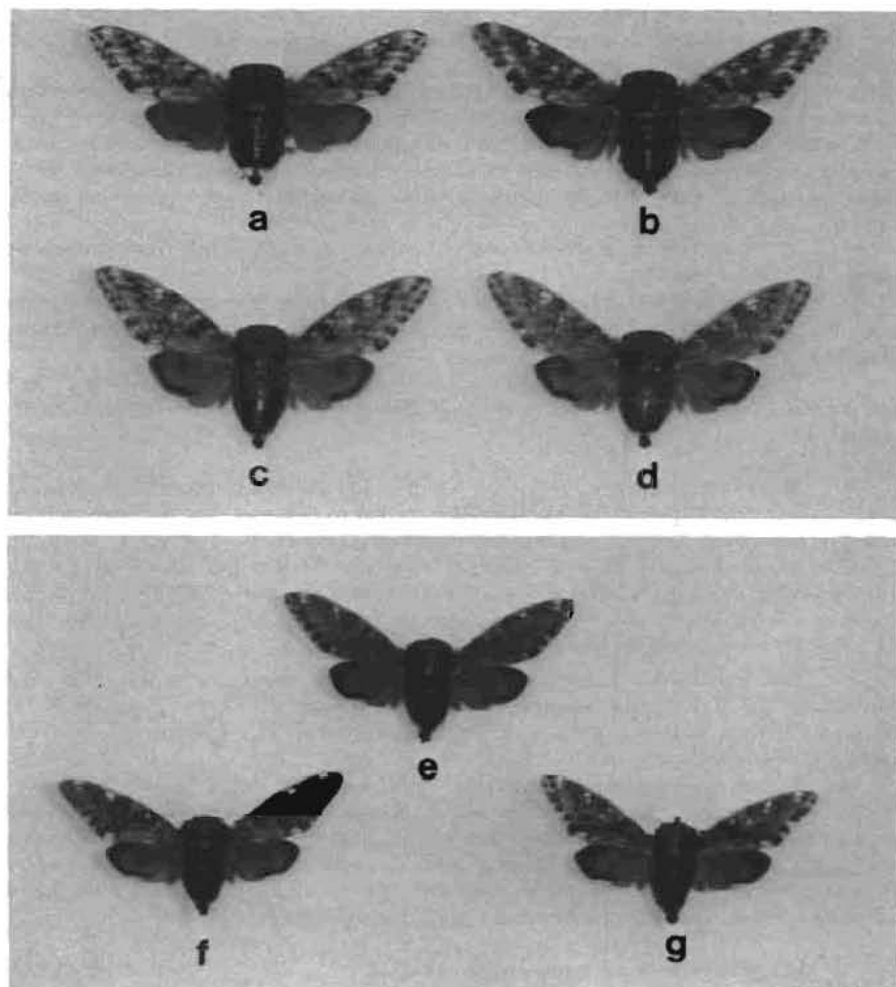


Fig. 1. Habitus of a, b) *Platypleura argentata* sp. nov., holotype and paratype. c, d) *Platypleura maytenophila* sp. nov., holotype and paratype. e-g) *Platypleura zuluensis* sp. nov., holotype and two male paratypes.

on the margin (each separated by a darker marking), a discal and a disco-basal bar and a subapical blotch; a darker bar proximal to the white disco-basal bar; a dark zig-zag marking along the discal cross-veins moderately-to-well developed; all of the markings contrast, but the wing has an overall whitish or silvery appearance.

Hind wing: Orange; margins narrowly blackened; a white patch at the ends of the anal cells.

Head: greenish-brown; ocellar region black; a black line between the eyes

through the ocelli, and a sinuous black line across the top of the clypeus; rostrum reaching third abdominal sternite.

Thorax: greenish, fading rapidly to ochrous brown after death; pronotum with black sulci, two elongated black spots on the anterior edge, and two curved black lines near the midline; paranota rounded; mesothorax with two black lunes on the leading edge, a black line along each side and two black marks against the cruciform elevation; underside greyish, with fine hairs; green bands on fore-femurs; operculae barely overlap.

Abdomen: black; a white, powdery coating on the seventh tergite; sternites brown, blackened medially.

Male genitalia: Typical of genus (Boulard 1972); comparatively few spines on urite X; apices of ventral processes elongated; apex of pygophore acute and distinct (Fig. 2b). The aedeagus bears a single spine.

FEMALE: Longest axis of tegmen: 31.1 mm (30.3–31.8;  $n = 3$ ). Coloured much like the male except that the seventh abdominal tergite has a powdery coat and not the eighth.

**MATERIAL EXAMINED.** Holotype ♂: SOUTH AFRICA: Natal, Port Edward [30° 14' S 31° 03' E], 27.xi.83, M. H. Villet; 11 Paratypes: 3 ♂♂, 1 ♀, same data as holotype but date 25.xi.83, 1 ♂, Transkei, Wild Coast Holiday Inn [30° 12' S 31° 05' E], 27.xi.83, M. H. Villet; 1 ♂, 1 ♀, Natal, Illfracombe Station [30° 48' S 30° 11' E], 20.iii.84, M. H. Villet; 1 ♂, Natal, Twinstreams Farm, Mtunzini [28° 58' S 31° 46' E], 17.xii.84, M. H. Villet; also 1 ♂, same data but date 6.i.85; 1 ♂, same data but date 20.i.85; and 1 ♂, same data but date 14.ii.85.

Holotype in the Transvaal Museum, Pretoria; paratypes in the Transvaal Museum (3 ♂♂, 1 ♀), the National Collection of Insects, Pretoria (2 ♂♂), the Natal Museum, Pietermaritzburg (2 ♂♂), the British Museum (N.H.), London (2 ♂♂, 1 ♀), and the author's collection (1 ♂).

Similar to *Platypleura divisa* Germar. However, in *P. divisa* the operculae overlap by at least 1 mm, the rostrum reaches the fourth sternite, the wing markings are not silvery and contrast less, and the black markings on the hind wings are more extensive, particularly in the subapical area. Also resembles the central African species *P. adouma* Distant, but the endotheca of the aedeagus bears a spine instead of ending in a cornus covered in spicules, as Boulard (1975) described for *P. adouma*.

**DISTRIBUTION:** Natal coastal region (Fig. 3).

**HABITAT:** occurs in patches in coastal milkwood forest. Favours mature specimens of the tree species *Mimusops caffra* as hosts, and is therefore often restricted to the deeper parts of these forests.

***Platypleura zuluensis* sp. nov.**, Figs 1e–g, 2c.

**MALE.** Longest axis of tegmen: 26.0 mm (25.1–26.8;  $n = 25$ ).

Tegmina: Rather more angular and broad than is typical of members of the genus *Platypleura*; colouration variable; brown basally, and greyer beyond the nodal line; veins marked with a lighter herringbone pattern; white markings include a discal patch on the costal margin, another on the anal angle, and a third on the wing margin

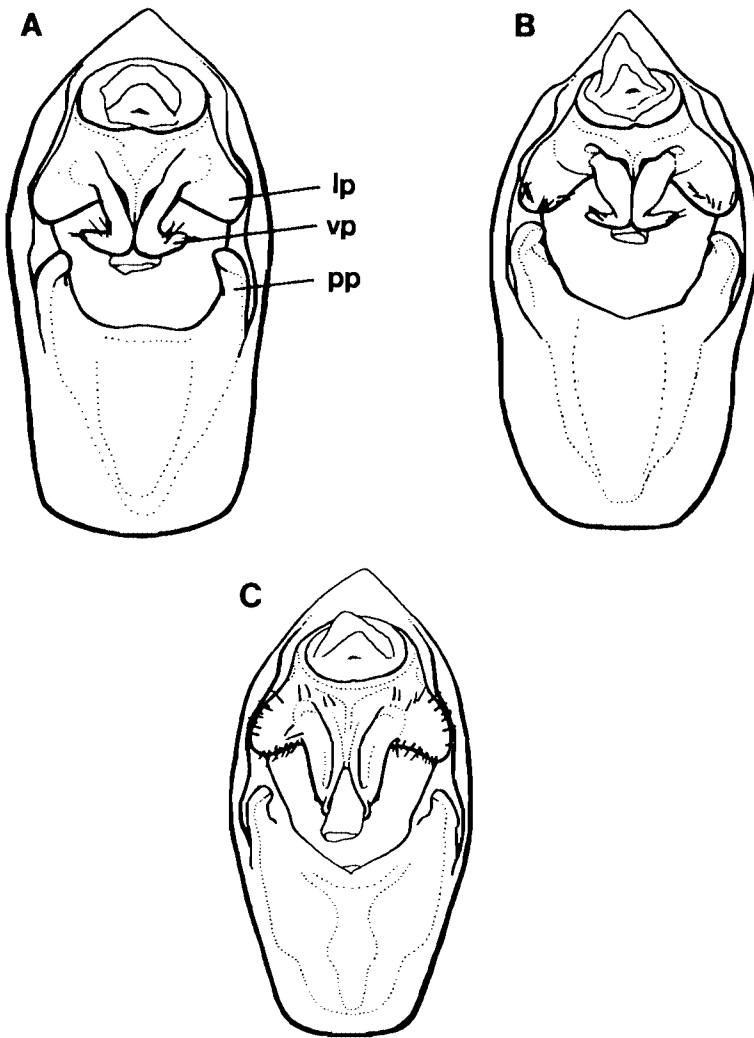


Fig. 2. Pygophores of a) *Platypleura maytenophila* **sp. nov.**, b) *Platypleura argentata* **sp. nov.**, c) *Platypleura zuluensis* **sp. nov.** lp lateral lobe of urite X, vp ventral process of urite X, pp pygophoral process.

slightly above this; a black disco-basal bar in some specimens; there may be other scattered, nondescript, light markings.

Hind wing: orange; margin and membrane blackened; a white area at the end of the anal cells.

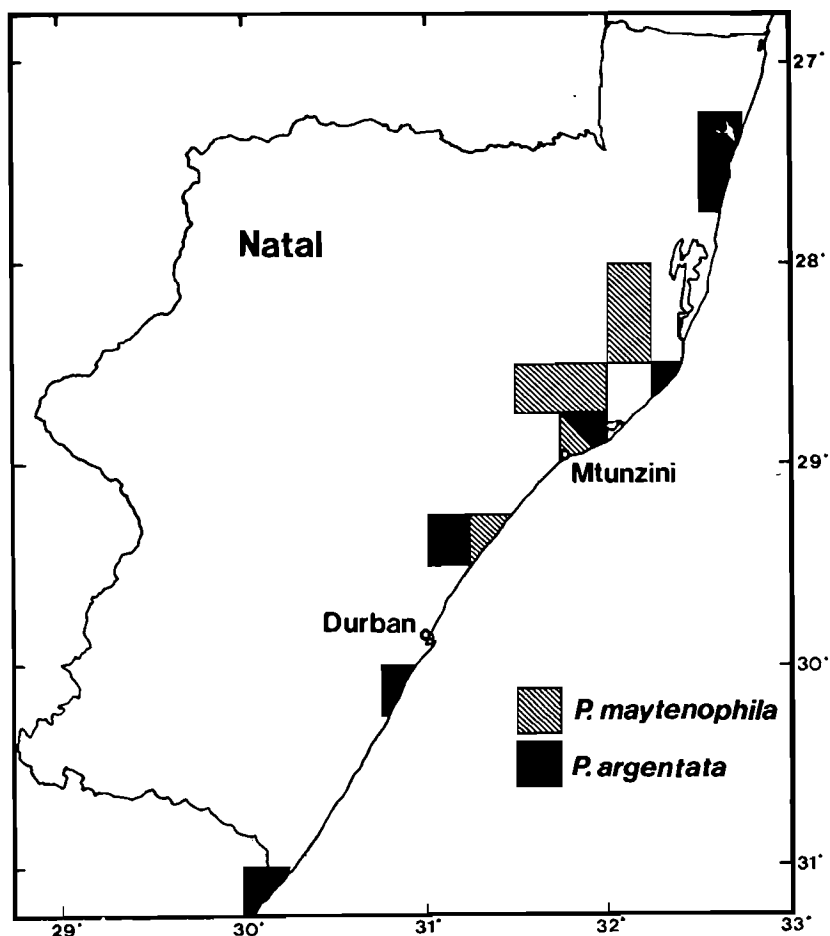


Fig. 3. Locality records for *Platyleura maytenophila* sp. nov. and *Platyleura argentata* sp. nov.

Head: green; ocelli with a small black spot on either side, and a black patch between them; a curved black marking between the ocelli and the eyes; a fine black line across the top of the clypeus; rostrum reaching the second abdominal sternite.

Thorax: prothorax green, with a central black 'X' and black sulci; paranota rounded and moderately developed; mesothorax black, with a dark brown central streak, a symmetrical green y-shaped marking on either side, then a brown blotch, and a green area above the bases of the wings; cruciform elevation light green; ventral surface grey-brown; legs slightly greener; operculae not overlapping.

Abdomen: sides covered in golden hairs; tergites black; sternites brown; eighth tergite of males with a white powdery coating on either side, leaving a central strip bare.

Male genitalia: Pygophore typical of the genus *Platypleura* (Boulard 1972), but ventral processes of urite X lack the distinctive anchor-like form of this genus. Spines on urite X short and fine (Fig. 2c).

FEMALE: Longest axis of tegmen: 26.6 mm (25.4–27.6;  $n = 13$ ). Markings as for the male, but the seventh abdominal tergite is whitened instead of the eighth.

MATERIAL EXAMINED: Holotype ♂: SOUTH AFRICA: Natal, Mtunzini [28° 58' S 31° 46' E], 20.i.85, M. H. Villet; 28 Paratypes: 3 ♀♀, same data; 3 ♂♂, same data as holotype but date 17.xii.84; 1 ♂, 2 ♀♀, same data but date 19.xii.84; 1 ♀, same data but date 20.xii.84; 2 ♂♂, 1 ♀, same data but date 8.i.85; 1 ♂, same data but date 31.i.85; 3 ♂♂, 2 ♀♀, same data but date 1.ii.85; 2 ♀♀, same data but date 5.ii.85; 1 ♂, same data but date 14.ii.85; 1 ♂, Natal, Umlalazi Estuary, Mtunzini [28° 58' S 31° 46' E], 13.ii.85, M. H. Villet; also 5 ♂♂, same data but date 14.ii.85.

Holotype in the Transvaal Museum, Pretoria; paratypes in the Transvaal Museum (4 ♂♂, 3 ♀♀), the National Collection of Insects, Pretoria (3 ♂♂, 2 ♀♀), the Natal Museum, Pietermaritzburg (3 ♂♂, 2 ♀♀), the British Museum (N.H.), London (4 ♂♂, 2 ♀♀), and the author's collection (3 ♂♂, 2 ♀♀).

This species has no known near relatives, and is easily identified by the distinctive genitalia of the male.

DISTRIBUTION: Mtunzini, Natal north coast. A recently discovered species for which only this locality is known to date (Fig. 3).

HABITAT: Inhabits the seaward fringe of the milkword (*Mimusops caffra*) forest and the adjacent *Passerina* dominated dune scrub. This ecotone is characterized by the presence of the tree species *Maytenus procumbens*, which is its host plant.

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